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ABSTRACT

Proper cleaning and storage of audiovisual aids is outlined in this brief guide. Materials and equipment needed for first line maintenance are listed, as well as maintenance procedures for records, audio and video tape, film, filmstrips, slides, realia, models, prints, graphics, maps, and overhead transparencies. A 15-item quiz on software maintenance is included. (RAO)

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MAINTENANCE SOFTWARE

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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Software Maintenance

In order to have a viable media program, you must constantly review and check your materials for damage and obsolescence. To a large extent you will have to rely upon the opinions and comments of your teachers. Generally your inspections will have to be of the "short and sweet" variety, due to the limitations of time. However, a complete review and inspection of all media software should be scheduled on a regular periodic basis, once a year at a minimum.

Daily spot checks will help end complaints such as "The wrong film was in the can. There was a big scratch in the record, which caused it to slip," etc.

Of course, hopefully your inspections will reveal no problems, but that would be wishful thinking. Because materials do become dirty and damaged you would be wise to gather the following materials:

Materials	Equipment
Soft Brush	Splicer for 16mm
Clean Rags	8mm
Super 8 Cartridges	35mm
Splicing Cement	Film Rewinds
Mylar Splicing Tape	Bulk Eraser for Magnetic Tape
Film Cleaner	Slide Copier
Treated Record Cleaning Cloth	Tape Duplicator
	Audio
	Video
Cellulose Pads	Drymount Press
Laminating Film	Paper Cutter
Drymount Tissue	Tacking Iron
Scissors	
Ruler and Straightedge	
X-ACTO Knife	
Film	
Blank Tape (reel to reel and cassette)	

Part of proper maintenance is proper storage. In general storage conditions for media software consist of moderate temperature (60 to 70 degrees) and humidity (50%); air conditioning is a good idea.

Of course all your software maintenance will be wasted if your equipment is neglected, for broken or dirty equipment will quickly damage your software.

MAINTENANCE PROCEDURE

SOFTWARE TYPE	CLEANING	REPAIRING	PROTECTING	STORING	OTHER
Records	Dust: use specially treated rag - rag may be restored by dampening - discard rag when dirty.	Scratches, warping and wear: visual inspection will reveal scratches and warping; severity of damage and wear only discernible by playing.	Heavy duty jackets for protection. Handle by edges. Do not allow worn needles to remain in record player. Brush on arm of record player.	Store vertically, pack tightly to prevent bending and keep away from heat.	If irreplaceable, investigate permission to tape record.
Audio Tape Video Tape	Dust: cannot clean tape once it is dirtied it is useless. Special machines are available for tape cleaning. Both Audio and Video tapes can be erased.	Broken tape may be spliced with mylar tape. Tape ends should be overlapped and cut diagonally at 45 degree angle, then butted and taped. The mylar tape should then be trimmed even with the edges. For scratches or crumpled edges, remove section of tape depending upon severity of damage. Avoid splicing video tape.	Splice a leader and tail to the audio tape to prevent damage to the tape itself or make a duplicate on a cassette and store the original.	Stored vertically in the supplied box, keep away from radioactivity, sources of electrical current or magnetic field. Store at 60 degrees and 40-60% humidity -- prevents brittleness and print through (see next column). Mark box and tape to prevent mixups.	Mark box and tape to prevent mixups. "Print through" is sound from different layers getting mixed. To avoid, use thicker tape and store at cooler temperature. Erasing may be done either by running tape through record mode without recording or with bulk eraser.
16MM Movie Film and Super 8MM Film	Using a film cleaner such as Renovex or Protect-O-film and special cellulose pad, run the film through the moistened pad as you rewind.	Broken film should be spliced using a splicer. The broken ends are clipped off, the emulsion scrapped off, a film cement applied and the two pieces of film are locked into place to dry.	Keep films in plastic or metal film cans.	Store films in cool medium humidity. Store vertically. Keep in metal or plastic cans supplied by manufacturers. Some Super 8 films have magnetic sound which requires the same precautions as	Bleach will remove the images from movie film, if desired.

MAINTENANCE PROCEDURE

SOFTWARE TYPE	CLEANING	REPAIRING	PROTECTING	STORING	OTHER
		Broken sprocket holes: one or two holes can be fixed temporarily with mylar splicing tape either prepunched or to be punched by splicer. For any major damage order replacement footage.		for audio tape.	
Film-strips	For cleaning, use the same equipment as above.	The less handling the better. Generally not spliced, just replaced; however, if desired the technique is same as for 16mm film.	Do not cinch. Handle by edges. Dirt causes scratches.	Store each filmstrip in a separate can. Cans are stored in shallow drawers with special dividers to locate cans.	Bleaching will remove image.
Slides	Cleaning: if glass mounted use moistened cloth. Cardboard Mounts: dust with soft brush. For severe finger prints use film cleaner, or specially treated cloth.	<u>Remounting Slides</u> There are three ways to mount slides: 1. Sandwich in mounting glass and tape shut. 2. Heat sealed cardboard mounts 3. Plastic snapshut mount.	Make duplicates and store originals using Repronar or Bowens Illumitran. Use glass mounting.	Store in the trays, keep trays in boxes. A moderate temperature and humidity is desirable.	Bleaching will remove image. Check positioning and sequencing in tray.
Realia Models and Mock-Ups	Dust Periodically with rag and brush. Soap and water if possible.	Glue, paint, nails, screws -- depends upon model.	Keep in large, well padded protective case appropriate to item.	On large shelves, avoid stacking.	
Prints Graphics Maps	Dust periodically. Wipe off any smudges, if possible.	Tears can be repaired with invisible tape, back taping, chartex backing, or dry mounting.	All of these can be protected by one or a combination of the following methods.	Storage: may be folded and placed in filing cabinets or kept in a large flat drawer. If mounted they may	Keep out of light to avoid fading. Keep at moderate heat and humdity to prevent either

MAINTENANCE PROCEDURE

SOFTWARE TYPE	CLEANING	REPAIRING	PROTECTING	STORING	OTHER
			Chartex: a thermally applied cloth backing which gives added strength. Dry Mounting: affixing a print to a stiff mounting board protects against tearing and edge damage. Lamination: a plastic coating applied to surface-print protects against tearing, marks and smudges.	be stored on edge. The items can also be rolled and stored in tubes or hung from racks, this is especially applicable if items are chartex backed.	drying out or mildewing.
Overhead Transparencies	To remove smudges, fingerprints, grease pencil, and felt tip pen, use warm water and soap, alcohol, spirit or ditto fluid, or transparency cleaner.	A scratch can be touched up with felt tip pens. A transparency with torn acetate is generally replaced.	Mount on a frame. If the image is subject to scratching; either spray with a clear plastic spray, laminate, place in a clear sleeve or sandwich between pieces of clear acetate.	Place individual transparencies in folder or large brown envelope and store in filing cabinet. Frames larger than 10"x12" will require a legal size filing cabinet. May also be stored in special ring binder with paper sleeves.	Keep out of direct sunlight for prolonged periods.

Pre-Post Test for Software Maintenance

1. True or False - Clean software will keep your projection equipment clean.

2. An application for the dry mount press in maintaining software would be: (a) to press wrinkles out of audio tape (b) to laminate a picture for protection (c) to seal slide mounts (d) to thermally splice a broken film.

3. A bulk eraser is (a) a way of purchasing large quantities of erasers (b) an electric erasing device for removing smudges from study prints (c) an electronic device for erasing the signal from an entire roll of magnetic tape at one time (d) a device which is placed in a tape recorder to remove interfering dust particles from the recording heads.

4. General storage conditions for media software would be (a) 20-30 degrees F and 10% humidity (b) 60-70 degrees F and 50% humidity (c) 70-85 degrees F and 20% humidity.

5. True or False - Records should be stored in a stack on their sides, this insures their remaining flat.

6. "Print Through" refers to (a) the mixing of sound from various layers of tape, when then tape is stored at too high a temperature (b) the lifting of print from a page when the book is stored in a humid room (c) a situation where the glue from the mounting tissue comes through your picture (d) none of the above.

7. Film can and should be spliced by the following methods (select all correct answers) (a) with mylar tape and the ends should be butted (b) with film cement, emulsion to emulsion (c) overlapped with mylar tape (d) all of the above.

8. True or False - Slides are sometimes mounted between two pieces of glass for protection.

9. True or False - A record cleaning cloth may be restored by moistening it.

10. When an audio tape is spliced the ends should be (a) straight cut and butted (b) cut at 45 degree angle and butted (c) overlapped (d) folded over.

11. True or False - Films is cleaned by running through a series of small brushes in a vacuum cleaning chamber.

12. True or False - Filmstrips, due to their special scuff resistant finish, require no special storage conditions and could in fact be stored rolled up with a rubber band around them.

13. True or False - Fingerprints can be removed from slides with soap and water.

14. True or False - The only maintenance required for most models, mock-ups etc. is an occasional dusting and/or washing.

15. Which of the following can be used to clean overhead transparencies (a) alcohol (b) spirit (or ditto) fluid (c) soap & water (d) all of the above.